

*San*  
*Leandro* **JOURNAL**  
*Computer*  
*Club*

December, 1992



SLCC Holiday Meeting  
Bring Family & Friends



NM



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New Editor:  
Steve Goldstein  
8-Bit Editor:  
Bob Woolley

### San Leandro Computer Club

P.O. Box 1506  
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1992

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# Message From the Editor

by Steve Goldstein

Fellow members:

It seems that I forgot the first rule I learned when I joined the Navy... "Never volunteer for anything!" Well, I volunteered to be the Journal editor and so far it hasn't been too bad. With very short notice, we seem to have gotten a Journal published. Thanks to Bob Wooley for the use of his DeskJet printer and thanks to Jim Hood for providing the skeleton layouts for this issue and for being the SLCC courier.

I hope to be able to publish a quality Journal each and every month but I need your help. I can't supply all of the articles and features that go into each issue so I'm asking you to make a contribution. If you have a software program, either productivity oriented or a game, that you particularly like write a short review of it and submit it for publication. If you have any questions or problems with your computer, submit them to the Journal and we'll try to get an answer. If you have a joke or any other item that you would like to share with the membership, submit it. Together we can make an interesting and informative publication which we and members of other user groups will enjoy reading.

Thanks,

Steve

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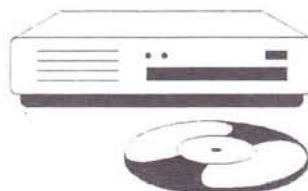
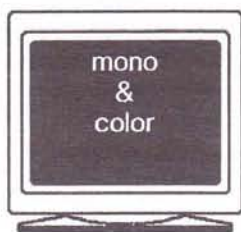
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# Pounding on the 8-Bits

*Buy your own / Share what you know / 8 bits are plenty*

December 1992

Well, go get your May, 1992 Journal and follow along here. We're going to pick up the IDE drive project again and you'll need the stuff in the last piece.

Ok, we've got a schematic now. This is not all done, but all the drives I have tested have run on this hardware, so get out the old soldering iron and hack away! I wish I could say the same for my software.... I don't have the actual specs for the sequences and timings on these dumb things and they each seem to be somewhat different. Routines that run on Conner drives won't run on Seagates and like that. The drives I have tested this hardware on include:

Maxstor	7120AT
Conner	CP3184
Conner	CP344
Quantum	ProDrive 40AT
Seagate	ST157A

I am fairly certain that any IDE drive will work properly with the exception of the software, so you may want to stick with one of these brands. Hate to have you buy a drive and not be able to make it work. As it is now, any of these drives will read about 50 sectors per second (256 byte sectors). That ought to fill up the old ramdisk in a hurry.

I used the 6502 socket as a connector for the signals I needed since they were all present on the CPU (with the exception of -D1xx). For that, I lifted pin 34 of the 6502 and brought it (D1xx) over from pin 14 of U18, the 74LS138 on the motherboard. The IDE drive AND the ICs (not the 6502) are powered from a separate +5v/+12v power supply and the extra ICs were mounted on a small perf board as was the original 6502. The 40 pin IDE cable plugged into a 40 pin header on this board, which allows me to completely unplug the board and work on it on my workbench. I used a standard 24 inch IDE cable between the board and drive - don't get too carried away here. Keep it 24 inches or less. If you mount your drive inside your 1200XL, you only need about 6 inches of cable, anyway.

The reason that this is so important lies in the history of the IDE interface. Originally, the IBM PCs had a controller card for their hard drives that plugged directly into the system board buss. The design of this buss is such that two of the signals, IOR and IOW (I/O Read and I/O Write) are used to edge-trigger the byte counter in the controller. Every time you

activate IOR, for example, you not only see a byte of data on the data buss, but the controller decrements his counter. Once the controller has decremented to zero, he stops transferring data, thinking he's done. Now, edge-triggering is nasty stuff if you don't have a clean, clean buss. Get a little ringing in there and the old counter decrements twice on a one byte transfer. When the controller stops sending data, your CPU is still waiting for more. He'll wait forever! When the IDE guys moved the controller from a card slot into the drive, they were very careful with the IOR and IOW signals. See the grounds on both sides of the signals? These are there to make the flat cable look something like a transmission line - to clean up the signal. If you don't ground ALL the pins called out in the manual (pins 2, 19, 22, 24, 26, 30, and 40), you won't be able to read or write reliably. The resistors in series are also necessary - to match the characteristic impedance of the cable. I added the HC367 buffer just for drill - it worked fairly well without it, but the signals LOOK better with it in (humor me, put it in).

The IDE controller sits in two address spaces, \$D19x and \$D1Ax. \$D19x is used just to provide a software RESET for the controller. If the drive gets whacked up (\$D1A7 reads \$Dx), then you need to do a reset:

```
100 LDA #$06
110 STA $D196 ; sets RESET bit on
120 JSR WAIT ; you must wait 5us
130 LDA #$00 ; drop RESET
140 STA $D196
150 JSR WAIT ; wait a long time!
```

The other address at \$D1A0 contains the eight control registers that you use to access the data. You just load the appropriate registers (sector count, sector number, cylinder low, cylinder high, and SDH) for the target sector and then store a command in the command reg. Once the command is stored, you look for not BUSY (bit 7 in the status reg at \$D1A7). Then you can start transferring data. Whenever bit 3 (DRQ) in the status reg is on, you read a byte of data with LDA \$D1A0. The controller, as explained earlier, places the data byte on the buss and decrements his data counter. Hopefully you will both finish transferring data together!

*Buy your own / Share what you know / 8 bits are plenty*

Like this:

```

100 LP1 LDA $D1A7; check for DRQ
110    AND #$08
120    BEQ LP1
130    LDA $D1A7    ; get the byte
140    STA $9C40,Y ; putting it on the
150    INY          GR.0 screen!
160    BNE LP1      ; back for more
                    until cnt=256

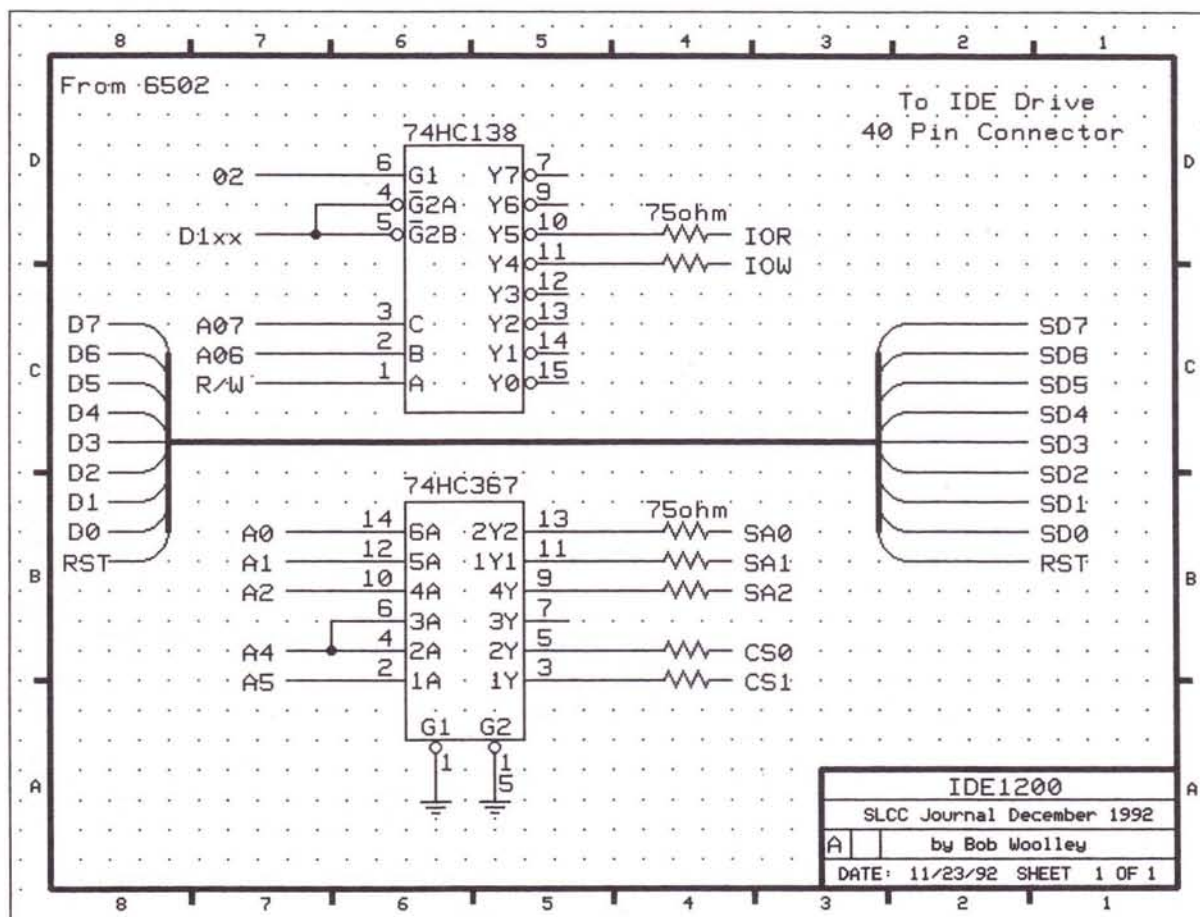
```

And, like that....

Here is a list of pin numbers to help you out:

Name	6502	IDE
D0	33	17
D1	32	15
D2	31	13
D3	30	11
D4	29	9
D5	28	7
D6	27	5
D7	26	3
A0	9	35
A1	10	33
A2	11	36
A4	13	38
A5	14	37
RST	40	1
R/W	36	-
02	39	-
A6	15	-
A7	16	-

have at it!!





## OUR 8-BIT DISKS

by Bob Scholar SLCC 8-bit Software Chairman NOVEMBER 1992

### Some General Comments:-

NOTE:- This article was printed with the PRINTSTAR3 program on this month's disk. The printer is still my trusty old STAR Gemini-10X.

This month's disk uses the last update of our FULmenu (condensed to 34 sectors). Also included is an old variant of the Atari DOS' DUP.SYS;- by L. J. Silver. See below.

Most DOC files on this disk are in Word Proc. format;- with CRs only at ends of paragraphs. DCDOC.BAS is not; it's in BASIC;- RUN it to read! I left it in that form as an example of another way to present text!

### D.O.M. Summary:-

This disk has 11 user programs- four Games and four Utilities, plus three extra puzzle sets (data files) for the WORDFUN game on last month's disk. One Utility is the alternate DUP.SYS (by L. J. Silver) which has appeared on some earlier disks.

### Contents - Disk #1011:-

#### FRONT:-

DCROSS- (or Desert Crossfire) war Game- strategy type; has DOC.  
PRNTSTR3- (Printstar 3) A Utility for text printouts, has DOC.  
THINK- another TETRIS clone with many options; and a DOC.  
TAPELESS- Utility to print spread sheets sidewise + aux's. & DOC.  
WORDFUN puzzle sets Nos. 11 & 13.  
FULmenu update (for Atari DOS).  
DUP.SYS ver. 2.6f by L.J.Silver.

#### BACK:-

HERBIE- BASIC Game, - like Donkey Kong, in four sections & DOC.  
SALVAGE- (SALVAGE 2001) Adventure Game. See instructions below.  
SUPERB30- Utility for printing PICTures; self DOC; options.  
WORDFUN puzzle set No. 12.

### Program Details :-

DCROSS.BAS- a shareware strategy

war game from Outland Quest Software (Kevin & Larry Scott). It's for two players (or 1 taking both sides). It plays from the keyboard. RUN the file INTRODC.BAS for instructions or play. You could Run DCDOC.BAS or DCROSS.BAS directly. It was on the AIM disk for September 1992.

HERBIE is a BASIC Game somewhat like Donkey Kong;- with four screens and a DOC. It uses most of the back side. Run HERBIE to start it. Jason Muscat is the programmer. It's from ABACUS disk #39. The scoring has me baffled.

PRNTSTR3.BAS (PRINTSTAR3 v. 1.2, by Thomas J. Andrews) deserves to be considered the featured item on this disk. It's an excellent text printing program, in BASIC, with a great many options and features. One limitation is that the text must be preformatted to 40 columns. The DOC. describes a convenient method for modifying files to conform to this requirement. The program itself is menu driven, and it will present you with, and guide you through all the options available, as to printers; kinds of paper; drives; output devices; headers and footers; page selection; etc. The program and DOC are from two OHAUG (OI' Hackers) disks. I edited the DOC slightly.

SALVAGE.BAS (or Salvage 2001) is a Simulation Game from ANTIC (9/89), by Jim Tesch. You've found an alien, deserted spacecraft. To start it you must find the engineering sections on five of the decks. Each deck has 30 rooms in different layouts. Some of the corridors are one way only. You have a three dimensional view of the deck from your helmet. The lower part of your screen has a compass showing the direction you are facing and the Bow of the ship. Indicator bars show your current oxygen and energy. Each deck has oxy. and battery rechargers- (the large tanks and the triangles).

Use the J/S to move and the button to replace your supplies. You must move quickly to complete all tasks before your surplus space suit fails. Press [OPTN] to see your current room No.- for one turn of energy. After each level's engineering station has been activated by your presence; find the trans-shaft bar (on the wall) to beam to the next level. Good luck!!

SUPERB30.BAS is Freeware. It's a PICTURE printing UTILITY with many options. Several printers can be used with it. It only displays \*.PIC and \*.SCR files. It's self DOCUMENTing- read the REMs. This is Version 3.0, by Trent Dudley (10/1986).

TAPELESS.BAS (+ 8 related files) can be used to print out spreadsheets sidewise in a continuous strip, using fanfold paper. It works with SynCalc, VisiCalc and SpeedCalc; and any of 4 printer families;- see TAPELESS.DOC. Programmed by Robert Grunbok, it was published in ANTIC (8/87).

THINK.OBJ is a TETRIS clone from Douglas Skrecky;- with numerous skill levels. It's from AIM's 8/92 disk. I have the ACTION! source code if you want it.

WORDFUN was the featured Game on last month's disk (#1010). It had 10 puzzle word data files. I have since found three more and put them on this disk. They are WFPZL11.\$ through WFPZL13.\$.

Besides the latest (34 sector) FULmenu, I've also included another DUP.SYS for Atari DOS, programmed by L.J. (Long John?) Silver. This has appeared on some older SLCC disks; but you may want to keep a copy on hand. It has some useful functions in a convenient format. I store it on a "UTILITIES" disk; and I use the "P. Copy Sectors" and the "Q.Check Sectors" functions frequently.



# Moran's Merry Minutes

## General Meeting November 3, 1992

The meeting was called to order at 8:10 PM by President Bob, Late as Usual, Woolley. All Officers were in attendance including our incompetent editor Jim Hood.

After introduction of visitors, reviewing the evenings raffle prizes, and general discussion on the state of Atari and other imponderables we got down to the mean and nasty stuff. What to do about replacing our outgoing (Finally) editor.

Now that Jim (Crooked Raffle) Hood has skimmed enough money from his lucrative job as raffle director, he has decided to retire to greater downtown Concord. To accomplish this move in style he has purchased a new mansion and also a new 200 Megabyte TT. Rumor has it that this mansion cost many hundreds of dollars.

This ascension of Hood to the land of milk, honey and big mortgages leaves the club without an editor for the Journal. After much discussion and more than a little arm twisting, a volunteer, from the ivory knob row no less, jumped to our offer of millions for the job of editor.

Steve Goldstein will be taking over as editor sooner or later, preferably sooner. With him he brings a wealth of talent as well as general ugliness. We will of course have to watch out for a rather demented and sharp sense of humor (and dirty jokes).

The biggest decision of the year was to have a year end party to celebrate the holidays and another year of Atari. So all should come to the December meeting for our usual cake and ice cream and all that stuff.

8 Bit Software Editor Bob Scholar presented the October floppy which has a pretty good mixture of games, demo's and utilities. The Wordfun program on the back of the disk seems to be an enjoyable Wheel of Fortune type game.

After another a short break and as usual raffle the meeting was adjourned at 9:40 PM.

Jim Moran - Secretary







# CALENDAR



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		<b>1</b> General Meeting 8:00 P.M. San Leandro Public Library	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
<b>13</b>	<b>14</b> ST SIG Meeting 8:00 P.M. San Leandro Public Library	<b>15</b>	<b>16</b>	<b>17</b> ST Beginners SIG 7:30 P.M.	<b>18</b> Publishing SIG 7:30 P.M.	<b>19</b>
<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b> Journal Deadline
<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>		



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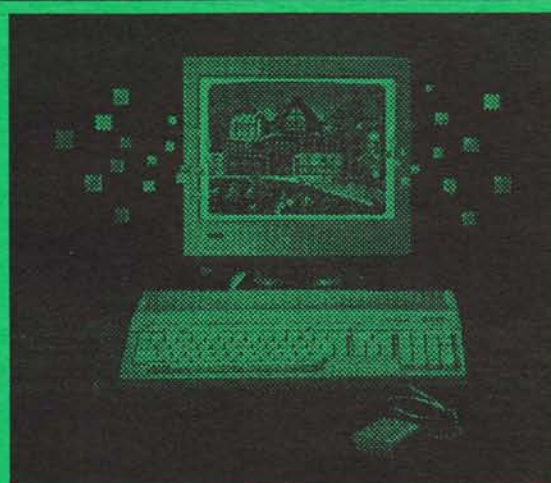
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# December Holiday Meeting ❄

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